

ABSTRACT OF THE DISCLOSURE

The invention comprises capacitors having a capacitor dielectric layer comprising a metal oxide having multiple different metals bonded with oxygen. In one embodiment, a capacitor includes first and second conductive electrodes having a high k capacitor dielectric region positioned therebetween. The high k capacitor dielectric region includes a layer of metal oxide having multiple different metals bonded with oxygen. The layer has varying stoichiometry across its thickness. The layer includes an inner region, a middle region, and an outer region. The middle region has a different stoichiometry than both the inner and outer regions.